

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
19 May 2005 (19.05.2005)

PCT

(10) International Publication Number
WO 2005/044311 A3

(51) International Patent Classification⁷: **G01T 1/29**,
A61B 6/03

(72) Inventor; and
(75) Inventor/Applicant (for US only): **BRAESS, Henning**
[DE/DE]; c/o Philips Intellectual Property & Standards
GmbH, Weissshausstr. 2, 52066 Aachen (DE).

(21) International Application Number:
PCT/IB2004/052299

(74) Agents: **VOLMER, Georg** et al.; Philips Intellectual
Property & Standards GmbH, Weissshausstr. 2, 52066
Aachen (DE).

(22) International Filing Date:
4 November 2004 (04.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03104145.2 11 November 2003 (11.11.2003) EP

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

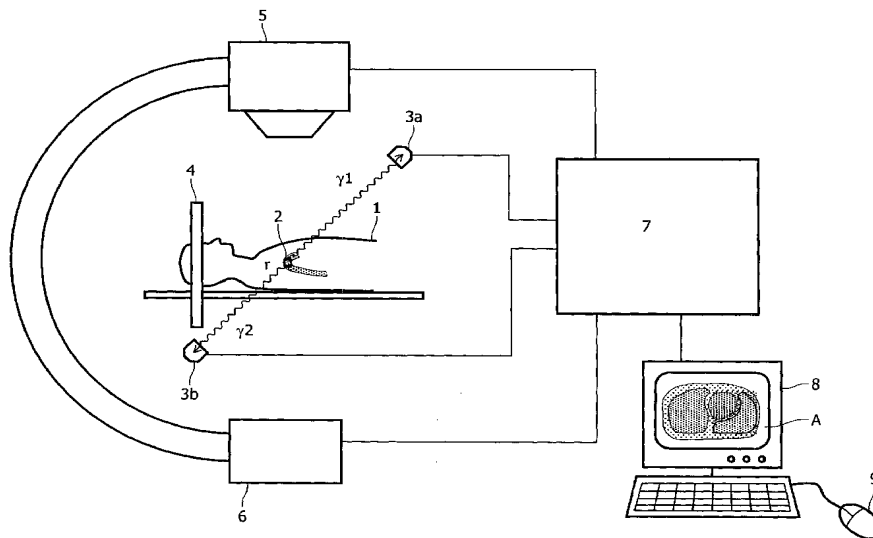
(71) Applicant (for DE only): **PHILIPS INTELLECTUAL
PROPERTY & STANDARDS GMBH** [DE/DE]; Stein-
damm 94, 20099 Hamburg (DE).

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

(71) Applicant (for all designated States except DE, US):
KONINKLIJKE PHILIPS ELECTRONICS N. V.
[NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven
(NL).

[Continued on next page]

(54) Title: DEVICE AND METHOD FOR DETERMINING THE CONCENTRATION OF A TRACER IN BLOOD



(57) Abstract: The invention relates to device and a method for determining the concentration of a PET tracer in the blood of a patient (1). With the aid of an X-ray CT (5, 6), first of all the spatial position (r) of a volume element (2) that is filled with blood is determined, which for example can be a part of the aorta or of the left ventricle of the heart. Subsequently, a TOF PET unit that comprises two detector elements (3a, 3b) is set in such a way that it establishes the concentration of the tracer in this volume element (2) and thus in the blood. This value can for example be used within the framework of pharmaco-kinetic examinations which are carried out on the patient (1) with the aid of a three-dimensional PET unit (4).



FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
7 July 2005

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.